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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/842,768	04/27/2001	Yu Zhu	0020-4855P	2830

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EXAMINER

JONES, STEPHEN E

ART UNIT	PAPER NUMBER
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2817

DATE MAILED: 01/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/842,768

Applicant(s)

ZHU ET AL.

Examiner

Stephen E. Jones

Art Unit

2817

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06 January 2003.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 2-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_                      6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

Claims 2-3 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Eda et al. (of record).

Eda et al. (Fig. 5) discloses a high frequency circuit including: a plurality layers; a via hole (224) penetrating the layers; a planar impedance matching circuit (221) is connected to a signal line (201, 225) and the via for matching the impedance of the signal line (Claim 2). Regarding claim 3, note that the phrase “based on an adjusted width and length” is not given any patentable weight since the structure does not appear to be adjustable in the final product form (i.e. only the final product is patentable in an apparatus claim).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eda et al. (of record).

Eda et al. teaches a circuit as described above. Eda et al. also teaches connecting a stub to the impedance matching line (221) (see Col. 8, lines 15-19) for impedance matching.

However, Eda et al. does not explicitly teach using one stub on each side of the matching line (Claim 4).

It would have been considered obvious to one of ordinary skill in the art to have modified the Eda et al. matching line to have included one stub on each side of the matching line instead of the single stub taught by Eda, because it would have allowed for a mere optimization of the impedance matching determined by the pre-selected signal line's impedance, thereby suggesting the obviousness of such a modification.

Regarding Claim 5, note that the phrase "based on an adjusted width and length" is not given any patentable weight (see the rejection of claim 3 above for details).

Claims 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eda et al. (of record) in view of Okada et al. (US 5,701,128) (of record).

Eda et al. teaches a circuit as described above. However, Eda et al. does not teach that the impedance matching line and stub are formed of a plurality of series lines of different widths.

Okada et al. (Figs. 21-23 and Col. 7, lines 65-67~~8~~ to Col. 8, lines 1-3) teaches that stubs connected to transmission lines are an equivalent impedance matching circuit method to lines having different widths connected in series.

It would have been considered obvious to one of ordinary skill in the art to have substituted a matching line having varying widths such as taught by Okada et al. in place of the matching stub circuit in the Eda structure, because it would have provided an art-recognized functionally equivalent impedance matching means, thereby suggesting the obviousness of such a modification.

Regarding Claim 7, note that the phrase "based on adjusted widths and lengths" is not given any patentable weight (see the rejection of claim 3 above for details).

### ***Response to Arguments***

Applicant's arguments filed 1/6/03 have been fully considered but they are not persuasive.

Applicant argues that Eda et al. does not teach a planar impedance matching circuit formed by an impedance matching line with one end connected to the via hole and the other end connected to the signal transmission line.

Contrary to applicant's arguments Eda (Fig. 5) does indeed teach an impedance matching circuit line (221) with one end connected to a via (224) and the other end connected to a transmission line (201) through a via (225) (see Col. 8, lines 11-14 which describes that the impedance transmission line (201) is connected to the two parts of the stripline (201)).

Regarding Claims 4 and 5, applicant argues that Eda does not teach stubs on each side of the impedance matching line.

This argument is not persuasive, especially since Eda teaches that "an open stub or the like" can be connected to the impedance matching line (221) to provide impedance matching without having to increase the area of the substrate (see Col. 8, lines 16-20). The newly cited Saka et al. reference is provided as evidence that it is well-known to place stubs on both sides of a transmission line to impedance match (e.g. see elements 4, 4', 7, and 7', also see Fig. 1, and Col. 3, lines 43-44 and 47-48).

Also, applicant argues that the present invention is a simpler structure than Eda and that it results in an easier manufacturing process, etc. This argument is not convincing since it is not commensurate with what is claimed.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

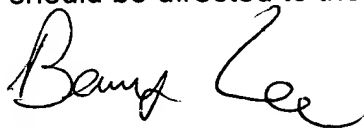
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen E. Jones whose telephone number is 703-305-0390. The examiner can normally be reached on Monday through Friday from 8 AM to 4 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert J. Pascal can be reached on 703-308-4909. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-6251 for regular communications and 703-308-6251 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.



BENNY T. LEE  
PRIMARY EXAMINER  
ART UNIT 2817

SEJ  
January 27, 2003